

Notice of Allowability

Application No.

10/774,636

Examiner

Christopher RoDee

Applicant(s)

FULLER ET AL.

Art Unit

1756

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Interviews of 31 October 2005 and 3 November 2005.
2. ☒ The allowed claim(s) is/are 1-37.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date 2/9/04
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 2/9/04
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Eugene Palazzo on 1 November 2005.

The application has been amended as follows:

Amend the claims as indicated

1. (Currently Amended) A photoconductive imaging member comprised of an optional a supporting substrate, a hole blocking layer thereover, a photogenerating layer, and a charge transport layer, and wherein the hole blocking layer is comprised of a pyrolyzed polyacrylonitrile formed by pyrolysis of polyacrylonitrile powder or film at a temperature of about 260 °C to about 500 °C for between 3 and 24 hours.

3. (Currently Amended) An imaging member in accordance with claim 1 wherein said pyrolyzed polyacrylonitrile is a dispersion ~~contains~~ containing a silane monomer.

In claim 14, line 2, delete "of poly(hydroxybutyl acrylate).

In claim 15, line 2, after "resin" insert – binder --.

19. (Currently Amended) A photoconductive imaging member in accordance with claim 18 wherein said phenolic resin is a mixture ~~comprises~~ comprising from about 1 to about 99 weight percent of a the first phenolic resin, and from about 99 to about 1 weight percent of a the second phenolic resin containing at least two hydroxy groups.

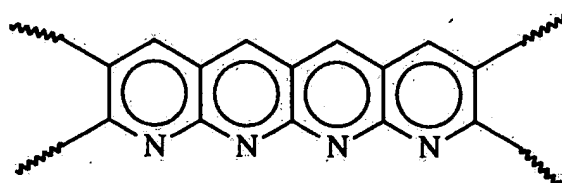
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22. (Currently Amended) A photoconductive imaging member in accordance with claim 1 comprised in the following sequence of a supporting substrate, said hole blocking layer, an adhesive layer, a the photogenerating layer, and the charge transport layer, wherein the charge transport layer is a hole transport layer.

In claim 25, line 2, change "photogenerator" to -- photogenerating --, and in line 3, after "said" insert -- charge --.

Cancel claims 38 and 39.

In the specification, at page 10, last line, after "being preferred." Insert, -- In an embodiment the pyrolyzed polyacrylonitrile is crosslinked, and is of the formula



Replace the title with the following title:

Photoconductive Imaging Members Having Pyrolyzed Polyacrylonitrile Hole Blocking Layer

The following is an examiner's statement of reasons for allowance: the closest art of record is JP 58-203448, which discloses a photoreceptor having a photoconductive layer. This photoconductive layer contains zinc oxide, pyrolyzed polyacrylonitrile, and an inorganic glass binder. There is no disclosure of placing the pyrolyzed polyacrylonitrile in a hole blocking layer

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as specified in claim 1. Staudenmayer *et al.* in US Patent 4,578,333 discloses a photoreceptor having an acrylonitrile copolymer in the interlayer, giving improved adhesion of the photoreceptor layers and increased photosensitivity. This interlayer is heated to a temperature of 60 °C to dry the layer. There is no indication that this heating would change the structure of polyacrylonitrile. As seen in the enclosed journal article to Saufi, heating polyacrylonitrile to a temperature of 250 °C causes the polymer to crosslink (p. 846, top left column and Figure 6). This journal article also indicates that the nitrile groups exist in the pyrolyzed polyacrylonitrile up to a temperature of 700 °C (p. 849, lower right column). Based on the claims as allowed and the journal article, the pyrolyzed polyacrylonitrile would be expected to be crosslinked because of heating to about 260 °C. There is no indication that this characteristic is present in Staudenmayer. The other cited references disclose phenolic resins in the hole blocking layers of photoreceptors.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher RoDee whose telephone number is 571-272-1388. The examiner can normally be reached on most weekdays from 6:00 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cdr
3 November 2005



CHRISTOPHER RODEE
PRIMARY EXAMINER